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JANUARY 1954

CHRONICLE OF THE WORLD HEALTH ORGANIZATION

RESISTANCE OF INSECTS TO INSECTICIDES
FIRST INTERNATIONAL CONFERENCE OF NATIONAL COMMITTEES ON VITAL AND HEALTH STATISTICS
SANITATION IN RURAL AREAS
PERINATAL MORTALITY
AFRICAN CONFERENCE ON NURSING EDUCATION
SEAFARERS AND VENEREAL DISEASE
TYPHUS CONTROL IN GUATEMALA AND MEXICO
STATISTICAL PROGRAMME OF THE PAN AMERICAN SANITARY BUREAU

REVIEW OF WHO PUBLICATIONS
NOTES AND NEWS
VIEWS ON WHO

WORLD HEALTH ORGANIZATION
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The World Health Organization (WHO) is a specialized agency of the United Nations and represents the culmination of efforts to establish a single intergovernmental health agency. As such, it inherits the functions of antecedent organizations such as the Office International d'Hygiène Publique, the Health Organization of the League of Nations, and the Health Division of UNRRA.

WHO had its origin in the proposal made at the United Nations Conference held in San Francisco in 1945 that a specialized agency be created to deal with all matters relating to health. In 1946, representatives of 61 governments met at the International Health Conference, New York, drafted and signed the WHO Constitution, and established an Interim Commission to serve until the Constitution could be ratified by 26 Member States of the United Nations. The Constitution came into force on 7 April 1948, the first World Health Assembly met in Geneva in June 1948, and on 1 September 1948 the permanent Organization was established.

The work of the Organization is carried out by three organs : the World Health Assembly, the supreme authority, to which all Member States send delegates; the Executive Board, the executive organ of the Health Assembly, consisting of 18 persons designated by as many Member States; and a Secretariat under the Director-General.

The scope of WHO's interests and activities exceeds that of any previous international health organization and includes, in addition to major projects relating to malaria, tuberculosis, venereal diseases, maternal and child health, nutrition, and environmental sanitation, special programmes on public-health administration, epidemic diseases, mental health, professional and technical training, and other public-health subjects. It is also continuing work begun by earlier organizations on biological standardization, unification of pharmacopoeias, addiction-producing drugs, health statistics, international sanitary regulations, and the collection and dissemination of technical information, including epidemiological statistics.

* * *

The *Chronicle of the World Health Organization* is published in English, French, Spanish, and Chinese editions. It contains general information on the Organization, its principal activities, the meetings of its expert committees and other advisory bodies, as well as summaries of its main technical publications. Material from the *Chronicle* may be reproduced in the professional press, providing due acknowledgement is made.

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SCHEDULE OF MEETINGS

7-13 January	**Study Group on the Psychobiological Development of the Child, second conference, London**
12 January	**Executive Board, thirteenth session, Geneva**
20 January-5 March	**International Exhibition on Low Cost Housing, New Delhi**
22-27 February	**Seminar on Meat Hygiene, Copenhagen**

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RESISTANCE OF INSECTS TO INSECTICIDES

During the last six years, residual insecticides have brought about a spectacular decrease in the ravages of insect-borne diseases. In certain countries, public-health problems which only a short time ago were acute and distressing have been relegated to the background ; it was even possible to believe that they had been finally overcome.

However, the hopes to which the use of chlorinated derivatives of the cyclic hydrocarbons (DDT type) gave rise are now threatened. For several years, in fact, resistance of certain insects to chemical compounds of this group has been reported from various parts of the world.

Without being alarming, the position is serious enough to have called for careful examination and, in the light of the facts discovered, for the drafting of research plans and programmes of action for the future. For this purpose the WHO Regional Office for Europe organized, in collaboration with the Istituto Superiore di Sanità, Rome, a symposium on the control of insect vectors of disease. The symposium was held in Rome, from 26 to 31 October 1953, and 28 experts from 11 countries participated. Most of the papers were directly or indirectly connected with the question of the resistance of insects to insecticides.

Development of Resistance

In 1947, the resistance of domestic flies was observed for the first time, in the Pontine marshes (Italy). This resistance has since spread to compounds other than DDT, so that in 1950-1 it had become general, applying to chlordane, aldrin, and methoxychlor as well as DDT. In 1951-2 the treatment applied against anophelines in Latium had no effect on the flies there. This phenomenon has not remained confined to one country only. Resistance has also been reported from various other parts of the world, and may now be considered as universal.

This fact has immediate practical and psychological consequences. Thus, for example, we must not expect to see the same rate of fall as in recent years in the incidence of infant diarrhoea and dysentery, diseases which can be transmitted by flies and which had been receding in a striking manner. From the psychological viewpoint, moreover, there can be no doubt that malaria control was accepted, supported, and encouraged by the population in most countries because it also resulted in the destruction of flies, bed-bugs, lice, and cockroaches; with the failure of chlorinated insecticides in the destruction of certain insects, the interest of the public will probably wane in certain regions. Among malaria vectors, resistance has not so far developed to the point of compromising the success of control measures. It has been reported among eight species of malaria vectors. The species which at present have the highest resistance are the salt-marsh mosquitos (*Aedes sollicitans* and *A. taeniorhynchus*) and, in California, *Culex tarsalis*, the encephalitis vector. At least five species of fleas, including *Pulex irritans*, have become DDT-resistant. Lice have also become resistant to DDT, as observed recently in Korea and Egypt; but they are still sensitive to other chlorinated hydrocarbon insecticides. *Triatoma*, the vector of Chagas' disease in America, has also developed resistance.

However, this list may give too dark a

picture of the present situation. Apart from the domestic fly and possibly two or three species of mosquito, the dangerous species are still sensitive to one or another of the main insecticides now available. Their resistance to these substances will probably develop gradually. Advantage must be taken of the time available to provide for other control methods, to develop new, active compounds, and to elucidate the mechanism of resistance, which is the only way in which to get beyond empirical measures.

General improvements, sanitation

The partial failure of control with insecticides has resulted in renewed interest in the basic control procedures, consisting of "making life impossible" for insects, by sanitation of places where flies multiply, such as stables and cowsheds, and by doing away with their potential breeding-places, such as manure heaps or spread manure, or by draining off stagnant water where mosquitos lay their eggs.

There is no doubt that the indiscriminate use of DDT has helped to hasten the appearance of resistance. Care should be taken that insecticides are employed with discrimination and that control measures against larvae and adults are not undertaken simultaneously in the same place.

Biological control

This method, which consists of making use of the natural enemies of the insects which are to be destroyed, has not been sufficiently investigated in mosquito control. However, the success of biological control in the case of the alfalfa caterpillar in California (where a parasitic virus is sprayed on the plants) and against the fly responsible for European pine sore in Canada by means of a specific virus is encouraging. Variable results have been obtained by the introduction of *Gambusia* fish, which eat mosquito larvae, into rice-fields.

New insecticides

Research among the group of compounds inhibiting certain enzymes indispensable for insect metabolism has led to the development of insecticides based on cholinesterase-blocking phosphoric esters. Their residual action is inferior to that of DDT, their toxicity for man is higher, and they are more expensive, which results in a double disadvantage since more frequent spraying is called for than with DDT. Compounds of this group which are relatively little toxic for man and the higher animals have been produced and used for several years, but their application is still limited. Insects have not developed resistance to these substances, which bring about irreversible changes in their metabolism.

Laboratory experiments have been made with mono-iodacetic acid, which inhibits certain enzymes which produce glycolysis in the tissues of insects, leading to paralysis and death.

For a proper orientation of research, the phenomenon of resistance must be analysed; how resistance is built up and what are the means of defence of insects must be determined. Experiments have been under way for several years on this, and the few results they have led to are encouraging.

Mechanism and Transmission of Resistance

The mechanisms by which the insect escapes the action of toxic compounds and transmits resistance to its descendants are numerous, and the physiological, biochemical, and genetical processes involved are only incompletely known. Moreover, the intoxication mechanism itself is still unknown. It is agreed that DDT has a toxic effect on the nervous system, but it is possible that DDT itself may not be the active neurotoxin but may

merely induce its production in the organism. It produces instability of the nervous system and renders it abnormally receptive to various types of excitation. It would seem that resistance may develop even in the neuron or the sensory cell, which can then tolerate abnormal amounts of DDT.

Despite the considerable difficulty of such research, it has been established that the insect defends itself by detoxication, by reducing the rate of absorption of toxic compounds, and by storing large amounts of insecticide in the tissues.

Certain resistant insects enzymatically decompose toxic compounds, particularly chlorinated compounds, and transform them into harmless metabolites. (The enzyme responsible has been isolated from several strains of flies and partially purified.) Thus DDT is transformed into DDE, a non-toxic ethylene derivative. This detoxication in the insect organism does not follow any single or simple scheme but involves complex and varied biochemical reactions.

The absorption rate and permeability may be reduced in resistant individuals, sometimes by a change in the properties of the integument, the tracheal lining, or even the nerve surface; these characteristics may be linked genetically with other forms of resistance.

The resistant insect can also store without harm in certain tissues or on certain chemical groups, such as the lipids, doses which would be toxic for sensitive insects.

These various processes are not mutually exclusive. They may co-exist in the same strain, or even in the same individual. From the practical viewpoint, the search for inhibitors of enzymatic detoxication, which is already under way, can, if successful, solve only one aspect of the problem, since other processes are involved.

Genetical investigation, first undertaken with flies, is equally difficult. The concept of " resistance " is complex and, to be properly understood, must be broken down into its component elements. It was seen at the outset that " knock-down " is distinct from fatal poisoning, and the complexity is aggravated by the fact that the genetics of the normal fly are still little known. Research workers are agreed that the domestic fly is highly polymorphous and heterozygous; it is consequently subject to mutations, making it suited to selective adaptation. Mutation leads to the simultaneous modification of several factors, which may not all be favourable to the survival of the insect—a fact of practical importance. " Knock-down " and poisoning depend on different genes. The first seems to be a Mendelian factor, the second a characteristic dependent on several genes. In the fly neither the cytoplasmic factors nor the sex chromosomes seem to play a part in resistance. Furthermore, it has been found that resistance is not acquired to all insecticides in the same chemical group. Recent research has shown that, in several strains of flies, resistance to BHC, to chlordane, and to lindane is independent of DDT-resistance. Nothing definite can yet be said as regards the dominant or recessive nature of the factors causing resistance, since experiments have given indefinite or contradictory results.

Future Research

The present lack of knowledge concerning the intoxication mechanism and resistance in insects has already been gone into, and it now only remains to indicate the following fields in which research needs to be carried out :

(*a*) physiology of normal insects;

(*b*) analysis of the intoxication and death mechanisms with insecticides in widespread use;

(*c*) analysis of mechanisms leading to resistance (break-down of toxic into non-toxic

substances, storage of DDT in the tissues), and of the action of synergists; and

(*d*) development of new insecticides to which resistance is less readily acquired (phosphoric esters, pyrethrins, allethrins).

Role of WHO

In their report,[1] the participants in the symposium expressed the wish that WHO should assume a co-ordinating role by :

1. collecting and disseminating scientific information and the results of specialist research, particularly on methods making it possible to detect resistance in insects of epidemiological importance at the earliest possible stage;

2. encouraging specialized institutions and laboratories in different countries to carry out tests on the new insecticides proposed, before they are utilized on a large scale, so that development of resistance to them may be assessed;

3. stressing the worldwide importance of the resistance problem in epidemiology and encouraging research that will ensure, throughout the world, that measures against insect vectors—which have given such promising initial results and which cannot be relaxed—are effectively maintained.

[1] The Report on the symposium will be published at a later date in the *World Health Organization : Technical Report Series.*

International Certificates of Vaccination against Yellow Fever

In a supplement to the WHO *Weekly Epidemiological Record* No. 357, the arrangements are given for the issue of international certificates of vaccination against yellow fever. This publication, which gives the situation as on 30 October 1953, lists the centres designated by the responsible health administrations in 118 countries and territories for the issue of valid certificates, the yellow fever vaccines approved by WHO, the stations approved by WHO for testing the activity of yellow fever immunizing vaccines, and the laboratories and institutes approved by WHO for the issue of international certificates of immunity against yellow fever under the terms of the International Sanitary Convention of 1944.

First International Symposium on Yaws Control

The September 1953 issue of the *Tropical Diseases Bulletin* opens with an eight-page review by C. J. Hackett of the collection of papers read at the First International Symposium on Yaws Control, Bangkok, 1952, which was published in a recent number of the WHO *Monograph Series.**

" This symposium "—explains the Director of the Bureau of Hygiene and Tropical Diseases, London, in an introductory paragraph—" was so important an event in the history of yaws that Dr. Hackett was invited to review the published account of it at length. The published report contains much detailed information, and much discussion of important principles, and readers are strongly advised to consult the original."

The reviewer concludes : " This is one of the major publications on yaws and should be studied by all concerned with preventive medicine in areas where yaws is endemic and by all responsible for yaws control measures. The Symposium should come to mark a new era in tropical rural health which has been initiated by the effective co-operation of national and international activities."

* *World Health Organization : Monograph Series, No. 15, iv+418 pages, 32 plates; price : 22/6, $4.50, Fr. fr. 1,440.—, Sw. fr. 18—. Mixed-language edition containing articles in either English or French, with summaries in both languages.*

FIRST INTERNATIONAL CONFERENCE OF NATIONAL COMMITTEES ON VITAL AND HEALTH STATISTICS

The First International Conference of National Committees on Vital and Health Statistics, convened under the auspices of the World Health Organization in close collaboration with the United Nations, was held from 12 to 17 October 1953 at the General Register Office, Somerset House, London. It was attended by delegations from 28 Member States and Associate Members of WHO and by representatives of the International Labour Office and the International Statistical Institute.

The Right Honorable Iain Macleod, Minister of Health for England and Wales, reviewed the history of the General Register Office and in this connexion alluded to the appointment of Farr, saying : " What was decisive from the point of view of this Conference was the Registrar General's selection in 1838 of Dr. William Farr as Medical Assistant, the first medical man, I think, employed by our Government. " He interpreted the choice of Somerset House as the venue of the Conference as an international tribute to the work done on vital and medical statistics by the General Register Office and by Farr in particular. He went on to say that just as diagnosis was a necessary precedent to medical treatment, so statistics were the necessary foundation for the work of national and international health organizations. It was a matter of national choice what method should be used for collecting vital and health statistics, and not all countries followed the same pattern; that adopted in the United Kingdom might appear odd and even illogical to other countries, but at least it worked. The Conference would allow delegates from all over the world to make a comparative study of methods in use and would thus assist in improvements in the method of collecting statistics.

The first International Conference on the Classification of Health and Vital Statistics, he continued, had been held in 1893, and had embodied in its conclusions the principles on which Dr. Farr had worked from 1838 to 1880. The system of international classification then adopted had been amended six times since, and one of the objects of the present Conference was to determine if the classification adopted in 1948 was still adequate. Both the collection and the classification of statistics were directed towards their use, and no policy decisions could be taken by persons responsible for the health of the people without them. Even from the lay point of view it was fascinating to watch the rise and fall of curves showing the increase and decrease of diseases.

Sir Walter Russell Brain, President of the Royal College of Physicians, who had been appointed Honorary President of the Conference by the host Government, stressed in his address [1] the historical importance of the Conference, the first international one of National Committees dealing with Vital and Health Statistics, and commented on the new, wider conception which had inspired the holding of the meeting.

The Conference unanimously elected Professor A. Bradford Hill, of the London School of Hygiene and Tropical Medicine, as Chairman. Professor Stefano Somögyi, of the Central Statistical Institute, Rome, and Dr. N. Vejjavisit, Director-General of the Department of Medical Service of the

[1] For the full text of the presidential address delivered by Sir Walter Russell Brain, see page 10.

Ministry of Public Health, Thailand, were elected Vice-Chairmen.

The objectives of the National Committees on Vital and Health Statistics, which had been established in some 30 countries after the Sixth Decennial Revision Conference of the International List of Diseases, Injuries and Causes of Death in 1948, were then reviewed, and it was recommended that any government which had not yet fully considered the formation of such a committee, or its equivalent, should study the practicability of doing so. WHO should not only circulate the information received from National Committees but also point to significant developments in vital and health statistics in the different countries.

Realizing that the collection and elaboration of national vital and health statistics had to be adapted to the degree of social and administrative development of each country, the Conference considered separately the types of statistics which would be of the greatest practical value in areas where health and statistical services had reached a high degree of development, where they were still in a primitive condition, or where they had reached an intermediate stage.

As to the first of these, the Conference recommended the application wherever possible of the " Principles for a Vital Statistics System " already approved by the Economic and Social Council of the United Nations. On population statistics, it recommended that detailed decennial censuses be carried out and that population estimates be made in intercensal years. Where intra-national migrations took place, quinquennial censuses might be envisaged, if necessary, on a less detailed basis than the decennial ones.

Even in countries where civil registration was practically complete, records were often deficient regarding the social, occupational, and economic characteristics of the individuals concerned in birth and death registration. Since it was undesirable to complicate the work of registrars by increasing unduly the number of questions on birth and death certificates, the Conference felt that studies of such characteristics could, if necessary, well be carried out by special sampling investigations. Indeed, the Conference devoted considerable attention to the possible advantages to be derived from the use of modern sampling techniques, which, while they could not be expected to solve all the problems of vital and health statistics, nevertheless often offered a means of obtaining reliable statistical information, in many cases more cheaply and quickly than by conventional methods. Their use in countries without highly developed statistical systems offered particular promise, allowing for a fuller utilization of the limited resources available.

The Conference recognized that statistics on the causes of death were one of the most important elements of health statistics and often served as a main basis for drawing up health policies. Although much progress had recently been made, there was still room for improvement, particularly as to the accuracy of the diagnosis of the cause of death. There was frequently more than one cause of death, and contributory causes should be recorded. In this respect, a considerable advance could be made by the universal adoption of the international form of medical certificate of cause of death recommended by WHO.[2]

At the same time, however, it was recognized that statistics of causes of death did not meet all the needs of health planning and research and had to be supplemented by accurate morbidity statistics. Although notification of communicable diseases represented in most countries a small part of the true morbidity, they had an important public-health significance and should not be neglected. But as the completeness of

[2] See *Chron. Wld Hlth Org.* 1952, **6**, 35.

notifications depended far more on an understanding by the medical profession of their value to patient and community than on the legal compulsion exercised to obtain them, the Conference felt it desirable that health administrations should revise the existing lists of notifiable diseases with that consideration in mind.

Where health and statistical services were underdeveloped, constant efforts should be made in those areas, such as main towns, in which registration of births and deaths was compulsory to improve the completeness of the details recorded as to causes of death; and where full information could not readily be obtained on the health conditions of the population by the fixed administrative machinery, medical surveys should be organized, possibly with the use of mobile medical teams. Wherever compulsory registration could not be introduced, the demographic surveys should be made on a much wider scale than the medical ones.

The Conference also considered methods for improving the quality of health and related vital statistics, amply dealing in this respect with the problems of confidentiality of records. It was felt that the problem of the relationship between the necessity not to maintain confidentiality in some instances—such as the case of patients incurring a communicable disease—and the traditions and legal requirements in many countries needed further study which could best be carried out by WHO. The Conference also considered that, in order to ensure accuracy and precision in vital and health statistics, there was definite value in giving undergraduate medical students formal instruction in elementary statistical methods and in the principles and purposes of medical certification of causes of death. A more immediate improvement in statistics, however, was likely to be obtained by efforts to instruct practising medical practitioners in statistical purposes and methods.

On the training of statistical personnel, the Conference noted with satisfaction the co-operation between the United Nations and WHO in carrying out training activities in health and vital statistics, and recommended that National Committees on Vital and Health Statistics assist in securing the training of statistical staff for their own countries. The Conference also considered what promotional and other measures could be taken to increase public and professional appreciation of the value of health statistics.

The Rural Hospital

The most recent number (No. 21) in the *World Health Organization : Monograph Series* is *L'Hôpital rural : sa structure et son organisation*, by R. F. Bridgman. This monograph, of which an English edition is in preparation, describes the role of the rural hospital, gives blueprints for its construction, and outlines the method of its functioning. It also contains information concerning rural hospitals in various parts of the world, with emphasis on the less-developed countries.

World Health Day 1954

As the year 1954 marks the centenary of the beginning of Florence Nightingale's pioneer work in nursing and sanitation, World Health Day 1954—which as in previous years will be observed on 7 April—will be consecrated to the theme of nursing and its significance for health in the modern world. The phrase which has been suggested to embody this theme is " The Nurse—Pioneer of Health ".

AN HISTORIC OCCASION

Presidential Address to the First International Conference of National Committees on Vital and Health Statistics

Sir Walter Russell BRAIN, M.D., LL.D., P.R.C.P.

The opportunity of being present on an historic occasion does not come very often, but I believe that we here today are making history, and that the date of this First International Congress of National Committees on Vital and Health Statistics, promoted by the World Health Organization, will be remembered as one which saw the first embodiment in form and action of a new idea which is to prove of the utmost importance for the future of medicine and, indeed, I can say without exaggeration, of mankind. I call it a new idea, but perhaps it would be not inappropriate to speak of it as a new conception, for it is no mere chance that in English we use the same word to describe both the birth of an idea and the origin of a new life. Human societies, whatever else they may be, are certainly biological organizations. Philosophers spend a good deal of time today discussing the body-mind relationship, but they nearly always mean by that the relationship between one particular mind and the body with which it is associated. Sociologists, however, and others who concern themselves with the ideas which move and change societies are equally dealing with an aspect of the body-mind relationship, for it is certain that new ideas can influence society only in so far as they are embodied in its individual members. So when I speak of this meeting as being in a double sense a conception, I am speaking not metaphorically but literally. The new human individual possesses only two parents, but social structures are more complex in certain respects, and today a new idea has been brought to birth owing to the vision and enthusiasm of workers in many countries in all parts of the world.

This, let me say again, is not a mere fantasy but a strictly biological account of a biological event. For it is apparent that we are living in an era in which life has reached one of the critical stages of its evolution, when, for a variety of reasons, national organizations have come to see that they are not self-sufficient, and when new organizations are developing which seek to operate as a mode of intelligence for the whole of mankind.

It is appropriate that medicine should be in the forefront of this process. The aims of medicine are purely beneficent, and it is our proud and treasured tradition that medical science knows no national boundaries and that a discovery made in one country today is available to the rest of the world tomorrow. But there is another, and even more important, reason, namely, that the conditions of health of each single individual are profoundly modified by the fact that he or she lives in a community, and in this respect the world today is a single community. Infection can now spread in a few days from one end of the world to the other and may thus enter a country in which, as a result of their bacteriological history, the inhabitants possess a poor immunity to the invader. Hence every nation is vitally interested in the incidence of many infections in all other nations. Moreover, differences in the morbidity and mortality statistics for different diseases in different parts of the world may prove of the greatest value in providing clues as to their causation : cancer is one obvious example of

this. From a broader standpoint, population trends, which constitute one of the most important factors which have to be taken into account by international statesmanship today, require accurate statistics for their calculation.

These facts, of course, are familiar to you all, and you will not be disposed to underestimate the difficulties which face us when we seek to make our governments, our medical professions, and, indeed, the public in general more aware of the importance of vital statistics, of the need for uniformity in this field, and of the fundamental necessity for accuracy in the data. Let me briefly consider these questions in their reverse order. It is obvious that the causes to which death is attributed must fall far short of complete accuracy in all countries. A post-mortem examination is nowhere performed in more than a small proportion of cases, and even that may need to be supplemented—for example, by bacteriological studies. Accuracy should be improved as more and better diagnostic methods become available, and particularly as members of the medical profession are educated to realize the importance of vital statistics. The confidentiality of information acquired by a doctor about his patient constitutes a genuine problem. Wide differences in this respect exist between different countries. In this country the medical profession, with the encouragement of the Royal Colleges, has felt free for over a century to report the cause of death upon a certificate which becomes available to the general public. I am sure that progress in this sphere will be made only by taking full account of the feelings of the profession in different countries, and you will be discussing what safeguards it is possible to introduce. Full safeguards are likely in themselves to increase the accuracy of the records.

The need for uniformity needs no emphasis, and you will be considering how far it is practicable to go in this direction. You may well think it a wise policy for the time being to aim at obtaining uniformity in a comparatively small field rather than to attempt more than it is at present practicable to obtain.

It is rather widely believed that vital statistics are dull ; and it is important that we should succeed in dispelling this idea. I have often reflected on the fact that preventive medicine seems somehow to lack glamour. The novelist or the author of a film scenario may show you the great surgeon peeling off his rubber gloves after removing the appendix, or the psychiatrist administering to his patient an electric shock, but somehow he does not find romance in the medical officer of health bringing a typhoid epidemic to an end, or in the vital statistician studying the number of deaths from carcinoma of the lung.

It is of fundamental importance to arouse or increase the interest of governments, doctors, and the public in all countries in vital statistics, for, without this, better technical methods by themselves can achieve little. It is undeniable that at present neither vital statistics nor even public health and preventive medicine excite the interest which their importance deserves and needs; and, if we are to change the public attitude to them, we must first try to discover why this is so.

Let us consider first the attitude of the medical profession, since in a sense the doctors are the key to the situation, partly because their direct help is essential, and partly because they are the natural propagandists for preventive medicine, with unique opportunities of obtaining the ear both of peoples and of governments. It might be thought that doctors who spend their lives dealing with the results of disease could be equally active in the sphere of preventive medicine, yet experience shows that this is not necessarily the case. It has to be remembered, first, that doctors who devote themselves chiefly to treatment usually have little time for much else, and, secondly, that the man or woman who is by temperament attracted

to the practice of medicine with its concrete problems and personal relationships, though daily made aware of the importance of preventive medicine, is usually less interested in, and fitted for, what seem the more abstract problems of the etiology and prevention of disease and the administrative measures for which the latter often calls. Conversely, the medical statistician and the medical administrator have chosen their sphere of work in preference to consultant and general practice.

Hughlings Jackson quoted Herbert Spencer as saying that integration must keep pace with differentiation as division of labour necessitates co-operation, and nowhere is this truer than in preventive medicine. The statistician and the physician here are not doing different jobs: they are dealing with different but inseparable aspects of the same job. Let me illustrate this by reference to poliomyelitis. It is a commonplace which is too easily forgotten that clinical observation is the foundation of all knowledge, for the nosological isolation of a disease depends in the first instance almost always upon a combination of clinical and pathological observation ; and bacteriology and immunology are built upon the same twin foundations. But when we come to the practical fieldwork of epidemiology, clinical recognition of paralytic and, still more, of abortive cases is basic. All this is perhaps obvious, but I stress it because I believe it points the way to increasing the interest of the clinician in vital statistics, which is to convince him that his contribution, just as in preventive medicine generally, must be made not to what is apt to seem to him an obscure and abstract discipline, but in his own sphere, in which he is the specialist, and where the part he has to play is indispensable because it is irreplaceable. And let us by all means add to this approach any information which will show the clinician the value and the use of the material which he supplies.

Vital statistics dull ! Not myself being a mathematician, perhaps I can afford to romanticize a little. It was Pythagoras who set number at the heart of the universe and saw in mathematical relations the foundation of everything that exists. I have often thought that the present age might fitly be described as neo-pythagorean. Every branch of science has become increasingly dependent upon mathematics, and future historians of thought may well regard it as the supreme achievement of the human mind that it was able to create mathematical symbols of such complexity and subtlety as to provide what seems to be an inexhaustible mode of representing the universe, for on this symbolic representation depends in no small degree our power of action. It is surely of particular interest to us today that, if I understand them aright, mathematical physicists have found that when they seek to represent the behaviour of matter in its minutest sub-divisions, only statistical methods are applicable. And it is to the mathematics of statistics applied to human populations that we look for the source of our power to improve health and prevent diseases which cannot be controlled in any other way.

This congress, therefore, has a twofold purpose : that we may learn from each other and that we may collectively impress upon the widest possible public the importance for the welfare of the whole world of the task upon which experts in vital statistics are engaged.

SANITATION IN RURAL AREAS

Sanitation in rural areas and small communities was the subject of discussion of the WHO Expert Committee on Environmental Sanitation when it met for its third session in late July 1953. Documentation from various countries provided a background for the committee's study of the sanitation problems of two-thirds of the world's inhabitants—those living in rural areas.

India

Two papers from India, one by M. V. Suryaprakasam, Public Health Engineer, Vijayawada, Madras, and the other by P. C. Bose, Chief Public Health Engineer, State Health Department, West Bengal, described conditions in that country and the efforts which have been undertaken to improve them. Excreta disposal from individual houses in rural and semi-rural areas is a major problem : among the 85% of the population living in innumerable primitive villages, there are no organized means of removing excreta from the fields and by-lanes which are used by the people in the absence of any form of latrine ; town-dwellers are provided with service latrines, but the removal of excreta and the cleaning of these facilities are dependent upon a community of scavengers, who are social outcasts. In cases in which excreta are carried to a disposal ground, they are composted along with other town refuse —a procedure which is satisfactory, though the methods used for the conveyance of the excreta and the existence of a special group of people whose social function it is to collect them are far from satisfactory.

In rural areas of India where sewerage systems with centralized treatment works would be uneconomical, the immediate aim is to induce individual householders to construct latrines requiring no servicing and with a hygienic method of excreta disposal. Pit latrines for the use of two families have been adopted in some towns, and the cost of such an installation is within the means of lower-middle-class and working-class people. More-well-to-do people could afford to install flushout latrines, connected to a septic tank and an absorption-field. Introduction of such sanitary measures depends, however, upon proper education of the people.

The supply of water is another serious problem in rural India. Ancient Indian national epics contain many references to the supply and preservation of water and to concern for keeping water-supplies free from contamination. Unfortunately, present-day villagers, ignorant of the rules of sanitation known to their forefathers, use the same water for all purposes—bathing and washing clothes as well as drinking and cooking.

Experience over the past thirty years has shown that the best and safest source of water-supply is the tube-well. For its construction a pipe—usually of galvanized wrought-iron—is driven into the earth until water is struck. At the bottom of the pipe is a strainer or filter, which admits subsoil water but prevents the entry of fine sand. Studies on rural water-supply carried out in an area near Calcutta by the late Professor K. Subrahmanyan and Professor Vaskaran, of the All-India Institute of Hygiene and Public Health, revealed that " tube-wells in that area yield a water of quality that is not significantly affected by the degree of sanitary conservation or the lack of it at the surface,

mode of usage, the depth of strainer or location of tube-well ". Bacteriological examination of 3,586 samples from tube-wells during the course of two years showed that 80% of the samples were bacteriologically pure.

The Government of West Bengal has, since 1947, been spending $252,000 yearly for the sinking of tube-wells and masonry-wells where surface water is not available. Under a recent development scheme, 8,600 tube-wells and 350 surface-wells were sunk during the period August 1947-December 1952. There is a total of 22,446 tube-wells functioning at present.

While it is difficult to assess with any degree of accuracy the positive health benefits resulting from efforts to increase the sources of water-supply in parts of rural India, it is known that the number of deaths caused by gastro-intestinal diseases is decreasing.

Africa South of the Sahara

Water-borne intestinal diseases are widespread among African populations, according to a paper presented by Dr. N. D. R. Schaafsma, Public Health Engineer of the WHO Regional Office for Africa. It seems likely, he states, that these infections result from the use by village populations of dug wells or small lakes and pools as sources of domestic water-supply.

In some areas little water is to be found, and its supply therefore creates the greatest difficulties. For example, in one part of Nigeria the only available water during the six-month dry season is from a single stream. People live as far as 30 miles (50 km) from this stream, and most of the population of about 200,000 store water during the rainy season for use during the dry months. Pots of 3-4 gallons' (14-18 litres') capacity are used for this purpose, and the more well-to-do people possess up to 300 such pots, sunk in the earth to keep the water cool. During a survey of this district, more than 1.5 million of these pots were counted. In order to prevent mosquito-breeding in the area, where yellow fever is endemic, all pots have to be covered when full and carefully dried when empty.

Sewage disposal in many of the countries and territories of Africa south of the Sahara is also far from satisfactory. In Angola, bored-hole latrines have been introduced. In small towns and villages of the British colonies, public latrines have been constructed near markets. Some of these have septic tanks; but, when no water-borne disposal can be provided, daily cleaning and flushing are insufficient to keep the latrines clean and to give the required dilution in the tanks. In other public latrines, night-soil buckets are used; but the disposal of the night-soil creates difficulties. If the bucket system is used, as it sometimes is in towns, composting takes place.

WHO has planned a project for the Seychelles in which better sanitation will be systematically introduced, with health education as an important concomitant. It is expected that the improvement of water-supplies, of sewage-disposal practice, and of housing will help to control intestinal parasitic infections and to create better health conditions.

In a paper entitled " Progress in the training of rural health staff in Uganda ", E. S. Hines, Chief Health Inspector, Uganda Protectorate, outlined the training of assistant health inspectors and hygiene orderlies and described the duties of the health staff. Much has been achieved in Uganda since a Public Health Act was passed in 1935, but much still remains to be done with regard to the development of training of assistant health inspectors and of ancillary staff.

The author of this paper concludes that the African health inspector of today is

faced with a more difficult psychological problem than previously :

> " The fear of epidemic disease has been the great ally of sanitary progress in all countries. Former and less-highly-trained African workers had the presence of plague and smallpox, or the recent memory of these diseases, to support their endeavours and to act as a spur to local activity. The present phase is more difficult. Major epidemic conditions have been controlled, and the African health inspector or hygiene orderly has now to work in a general atmosphere much less conducive to spectacular results. He must persuade the people that the effort required to obtain a healthy environment is really worth while. "

Because the African worker may easily become discouraged in the face of this enormous but less-well-defined problem, the leadership of European inspectors will be necessary for many years—to guide, stimulate, organize, and encourage work in rural hygiene.

The Americas

A paper by W. R. Sanches and E. G. Wagner, of the Serviço Especial de Saude Publica (SESP) of Brazil, gave an account of excreta-disposal programmes carried out in rural areas of that country. A preliminary survey of four towns of the Amazon Valley had revealed that conditions greatly favoured the transmission of intestinal parasites. It was necessary to devise a means of excreta disposal suitable to the economic standards of the population concerned, and it was found that in most instances the construction of privies was the immediate answer.

For carrying out the project, trained personnel were needed ; and, since previous experience had shown the advisability of using local people, training courses were organized for preparing " guarda " for sanitation work. These guardas subsequently made sanitary surveys (one guarda for each group of 400 to 500 houses was adequate), aided in the building of privies, gave instructions on how to maintain them, and made inspections to assure that these instructions were put into practice.

An important task of the guardas was to promote health education in all their contacts with the people. It was found that, if the aid of the people was enlisted and part of the construction was assigned to them, their appreciation and co-operation were much better.

A survey made three to four years after this sanitation project had been undertaken showed that intestinal parasitism had decreased. While the privies constructed may not be the final answer to the problem of excreta disposal in rural areas of Brazil, they have at least done much to promote better health habits among the people and to point out the importance of proper sanitary facilities.

A campaign undertaken by the National Federation of Coffee Growers (NFCG) of Colombia to provide farmers with adequate water-supplies was described in another paper, by L. Pachon-Rojas, Director-General of Rural Hygiene of the NFCG. With the technical and financial assistance of the NFCG, systems of water supply (collective or individual, as the case required) were installed in rural areas of Colombia, particular attention being paid to coffee-growing farms. The health and economic benefits of the campaign were considerable, and the ten-year experience gained in this co-operative enterprise could be of value to other localities with similar problems.

In a paper by M. D. Hollis, Assistant Surgeon-General of the US Public Health Service, the economic aspects of rural sanitation in the USA were considered. Although rural health conditions in the USA are comparatively good, they are inferior to urban health conditions, partly because rural sanitation is less a social responsibility than an individual responsibility, which many rural families cannot finance. An estimated 27 million persons among the rural popula-

tion need new or improved water supplies, and 33 million have unsatisfactory sewage-disposal facilities.

There is a great diversity in the rural economy, which means that, though sanitation needs are common to all areas, the refinement and complexity of sanitation facilities and services cannot be uniform. However, allowing for variable circumstances, the basic elements of rural sanitation in the USA could be realized within a generation.

Composting

One aspect of sewage disposal—composting—was treated in detail in a paper by C. G. Golueke, P. H. McGauhey, and H. B. Gotaas, of the University of California. In a review of the status of composting throughout the world, the authors describe the Indore process, a partially aerobic method of composting in which alternate layers of readily putrescible materials—such as garbage, night-soil, animal manure, or sewage-sludge—and of relatively stable organic matter—such as straw and leaves—are piled on open ground to a height of about 5 feet (1.5 m) or placed in pits, the mass usually being turned twice during the composting process. The liquor draining from the mass may be recirculated. This process, which was introduced into India about thirty years ago, is, with minor modifications, used in a number of other countries—e.g., England, South Africa, Australia, and New Zealand.

During the decade 1920-30, various means for mechanizing the composting process were designed and patented, among them a process developed by Dr. Giovanni Beccari and a modification of this known as the Verdier process. It is reported that more than fifty municipalities in Italy and France use the Beccari or Verdier process for composting municipal wastes.

An operation that is essentially an adaptation of the Indore process is used in the Netherlands. In some communities in Denmark and Sweden, mixed municipal refuse is prepared for composting by a process which consists of mechanical grinding and segregation and is then composted in open piles, 5-6 feet (1.5-1.8 m) high, under partially aerobic conditions.

There is widespread interest in composting in the USA, owing largely to the need for new methods for the disposal of municipal refuse. A rapid, mechanized process is favoured, and the completely aerobic method seems most suitable.

While no definite statement can be made concerning the possible health hazards involved in the composting of night-soil or raw sewage-sludge with municipal refuse, there are good reasons for believing that pathogens are destroyed in well-operated composting. Careful observations made in various regions where composting of night-soil or sewage-sludge has been conducted on a large scale have failed to demonstrate any incidence of disease resulting either from the operation itself or from the use of the finished compost. The soundest composting procedure may prove unsatisfactory from a public-health standpoint, however, unless hygienic methods of collecting the refuse are used.

The economic value of compost varies widely throughout the world according to the habits, customs, prejudices, and needs of different peoples. At one extreme, the use of compost on the soil is the very basis of survival ; at the other extreme, compost represents just another soil additive, available in small amounts to the home gardener but of no importance to the farming business. Both the smallest (China and India) and the largest (the Netherlands) users of inorganic fertilizers are also the greatest producers of compost. There are good prospects that the economic value of compost may reduce the cost of disposing of municipal wastes and sewage-sludge : when part of the present

cost of refuse disposal and sewage treatment is subtracted from the cost of producing compost, a municipality should be able to produce it at a price which would guarantee its acceptance, even in areas of the world where commercial fertilizer is widely used and where farmers are not of necessity concerned with the reclamation of organic wastes.

Health Education Aspects of Rural Sanitation Programmes

The health education aspects of sanitation programmes in rural areas and small communities were the subject of a paper submitted by M. Derryberry, Chief of the Public Health Education Division of the US Public Health Service. The author points out in this paper that in villages and rural areas the co-operation and understanding of the people must be secured when environmental changes are attempted, since the people themselves must perform many of the actions needed to break the chain of transmission of disease. The "sciences of human behaviour" provide the basis for the health education which the sanitarian must therefore undertake in planning environmental improvements. The essential facts about the people of the community must be assembled, answers to questions such as the following being sought : What health problems do the people recognize and are they interested in, and how much do they already know concerning them ? What are the usual channels of communication among the people concerned ? What social, cultural, and other influences might affect the programme ? Who are the leaders, natural as well as titular, through whom the people can be reached ? What resources exist in the community that might contribute to the educational programme ?

If careful study and planning with the people for the educational programme have preceded putting it into operation, few problems should subsequently arise. The sanitarian's task then becomes one of checking progress in terms of the criteria which have been set and of assisting the people to accept responsibility for their own improvement.

Evaluation of the Results of Sanitation Programmes

The means of evaluating the results of rural sanitation programmes were outlined in a paper by the Chairman of this session of the committee, Professor G. Macdonald. If conditions before and after sanitation work has been carried out are to be compared for the same area, statistics of mortality (in as full detail as possible) and of morbidity attributable to those diseases influenced by sanitation should be collected for as many years as is possible, and should be analysed to show both a trend and the degree of variation in the trend. It is pointed out, however, that such statistics may often be very difficult to evaluate.

Among the basic data listed by Professor Macdonald as being necessary for the estimation of the results of sanitation programmes are : general information concerning the area and the nature of the sanitation procedures instituted, together with similar information on an area selected for comparison; population figures, i.e., census data; mortality statistics, with an account of the method of notification and certification of death, an estimate of their accuracy, etc.; morbidity statistics, with information concerning their source; and a description of the environment, including such elements as housing, disposal of excreta and refuse, water supply, food cleanliness, vermin, and industrial hygiene.

* * *

Some of the papers prepared for the third session of the Expert Committee on Environmental Sanitation will appear in the *Bulletin of the World Health Organization* early in 1954. The collective views of the committee will be presented in a report which will be submitted to the Executive Board in January 1954. If its publication is authorized by the Board, it will subsequently appear in the Technical Report Series.

STUDY GROUP ON PERINATAL MORTALITY

A study group on problems related to the perinatal period was convened in Brussels late in 1953 by the WHO Regional Office for Europe, in agreement with the Belgian Ministry of Health. The group, composed of experts from nine countries of Europe and America, met under the chairmanship of Dr. Marcel Lelong, Director of the Ecole de Puériculture in Paris. In their conclusions, the group stressed the urgent need for trained personnel of the right quality if the perinatal-mortality rate was to be brought down. Among the other factors necessary to achieve the same end were greater prenatal supervision, improved conditions for hospital confinements and greater safety in the case of home confinements, and the greatest possible care of the newly-born infant, with close collaboration between obstetrician and paediatrician.

The study group agreed that in order to prevent the principal causes of perinatal mortality an endeavour should be made during the perinatal period : (*a*) to detect medico-surgical disorders likely to affect the health of the mother; (*b*) to give advice on general and special hygiene, and in particular on feeding and professional occupations, in order to ensure that the mother's health shall be as good as possible and that there shall be regular development of the foetus up to full term; (*c*) to ensure satisfactory conditions for delivery by detection of causes of dystocia and by suitable psychological preparation; and (*d*) to prepare for the postnatal period by suitable instruction to mothers so that they may know how to fulfil their maternal functions satisfactorily.

It would appear to be very important that the physician in charge of the confinement should also carry out the prenatal examinations or at least that such examinations should be effected under his direct supervision, with the collaboration of any specialist he may consider necessary for general medicine, radiology, nutrition, or psychology.

Prenatal consultation centres should preferably be attached to a maternity establishment. Independent prenatal centres are not to be recommended as effective liaison cannot generally be established with the obstetrician, and this lack of continuity considerably diminishes the value of the examinations during pregnancy from both the medico-obstetrical and psychological standpoints.

In towns, all methods are easily applied. In rural areas, the creation of small centres under the control of a maternity establishment may be envisaged. Specially equipped trucks might be tried. It seems that the greatest hope might lie in the contribution of rural physicians, who should receive adequate training in preventive medicine.

The proportion of hospital and home deliveries varies from country to country.

Hospital delivery offers preparedness to combat sudden emergencies and gives the

very optimum in physical safety. This holds true for both mother and child if close co-operation with a paediatrician is ensured. It also offers the mother a good chance for physical and mental relaxation, if her mental attitude is not opposed to delivery in an institution.

Home delivery offers uninterrupted continuity in the relation between mother and other family members and close contact between mother and newborn child, which also may be valid for hospital delivery if the rooming-in system is adopted. For many mothers, too, there is less emotional upset, and this may favourably influence the labour. In addition, the risk of infection in the newborn child is reduced.

The study group found that it was not possible to make any general recommendation on the subject of hospital versus home deliveries. This problem is closely related to the historical, cultural, and geographic structure of a country, as well as to the institutional facilities available.

Whether hospital or home deliveries are preferred, it should be stressed that every effort must be made to perfect the prevailing conditions concerning assistance and equipment.

The collaboration of a paediatrician is a prerequisite in the management of pregnancy, labour, and the puerperium.

The extent of the training and the qualifications of the personnel responsible for prenatal and delivery care depend on the degree of responsibility of the midwife. If she is to take greater responsibility for normal delivery in the home, her training should be more extensive than if she is to work entirely in hospital as a maternity nurse under the supervision of the doctor. But whether she is acting as a maternity nurse or as a midwife, it is important that she should receive more instruction than is now the case in the psychology of the expectant mother, so that she can establish the close relationship with the mother which is so important. These remarks apply with equal force to the doctor.

The great importance of the early prevention of all mental, physical, and socio-economic troubles which may afflict the mother and her child should be emphasized in the training of personnel responsible for prenatal and natal care. The information given to the mother by different health workers should not be conflicting. Methods should be found to keep the personnel who are working in prenatal and natal care fully informed of the latest developments in their specialty.

Wherever the birth takes place, the objectives are the same. First, there should be no separation of the child from its mother, except in cases of imperative need. Secondly, common infections should be prevented. Thirdly, the success of maternal feeding should be ensured by creating the necessary psychological atmosphere and by avoiding technical errors resulting from the still too widespread ignorance of the physiology of lactation.

These objectives cannot be achieved without sufficient qualified personnel capable of creating an atmosphere favourable for the development of the mother-child relationship.

For the reduction of perinatal mortality two conditions must be fulfilled. There must be collaboration between the obstetrician and the paediatrician in all fields (research and application), at all times (pregnancy, confinement, and post-partum), and at all levels (obstetrician, paediatrician, midwife, puericulturist); and secondly, effective liaison must be established and adequate personnel must be provided as rapidly as possible or, failing this, there must be an exchange of information among the various persons successively concerned with the health of the child.

On the whole, it was the opinion of the study group that in the last analysis the most

important factor for the reduction of perinatal mortality is the training of the right kind of personnel in sufficient numbers.

The study group concluded that in the great majority of cases the exact cause of neonatal death is not known and that the diagnoses given on death certificates are without nosological value. The desirability of scientific research in this field by the constitution of teams having at their disposal all the most up-to-date investigation techniques was emphasized.

AFRICAN REGIONAL CONFERENCE ON THE DEVELOPMENT OF NURSING EDUCATION

The African Region held its first nursing conference in Kampala, Uganda, from 28 September to 7 October 1953. The 40 participants included representatives from 18 territories south of the Sahara and from Liberia and Southern Rhodesia. The invited guests who attended included persons from various medical missions and from government education departments, and three senior African nurses from Uganda.

The subject of the conference was the development of nursing education in the Region. Discussions were based on the WHO survey on existing nursing education facilities and personnel. A report on this subject was presented to the conference by Miss Jane McLarty, WHO Nursing Consultant, who had surveyed 15 countries of the Region during 1953. It was supplemented by short statements from the representatives of five territories which had not been visited.

Discussion was organized around five major items : (*a*) what cultural factors in the African family and community way of life must be considered in the development of health services; (*b*) what are some of the major factors involved in the development of health services and training; (*c*) what nursing functions and types of personnel are required to meet health needs; (*d*) what educational planning, both basic and vocational, is indicated in order to prepare African nursing personnel; and (*e*) what are the next steps to be taken.

In spite of great differences in the cultural factors and stages of development of the various territories, common ground was found in basic principles which all agreed should condition the development of nursing services and education in the Region.

It was agreed that nursing services existed for the comfort and care of the patient and for health instruction of the community. In order to provide this service, nursing education must be adapted to the customs of the country and to the natural gifts of those recruited for nursing. Many Africans have unusual artistic and dramatic talents; they have considerable manual skill and powers of imitation. These attributes are of value in the development of personality and in acquiring technical skills. It was agreed that education should strive throughout to help in the development of personality as well as of technical knowledge and skill and that, in order to do this, the relation between the teacher and the taught has to be warm and individual. It was acknowledged that this is a difficult achievement in the stress and strain of the average hospital school of nursing. The trend in some territories to separate nursing service from nursing education was noted.

One of the African nursing delegates emphasized the bewilderment of the student nurse at the impact of Western customs and beliefs on her native culture. If her previous education has helped her to adjust herself to some of the conflicts this impact gives rise to, nursing school experience can continue the process, but many student nurses have had insufficient preparation for this sudden change, and disturbances in behaviour result from undermined security. It was suggested that nursing education at different levels would enable those with good basic education to obtain their nursing training at a standard suited to their intellectual capacities, while giving equal but different opportunity to those with less academic preparation but with practical gifts and with a suitable disposition.

It was considered to be of importance that student nurses in the Region, and particularly unmarried female students, be required to live in residence. Such residence should be a source of pride to the students, and sufficient freedom should be given during off-duty time to enable them to develop self-discipline and personality.

It was evident that both men and women were needed in the African nursing services and that many will be needed for institutional work. Through a process of selection based on the students' performance at the earliest level of training, it has been possible to provide supplementary education to enable the best to qualify for wider duties. Some are needed for supervisory duties and teaching in hospitals and schools of nursing. Men are required for para-medical or laboratory work in isolated areas, women, for work in maternity and child welfare or other specialized services.

The conference formed a subcommittee to classify the various types of training now being carried out in the Region; this is intended to be a first step towards an international classification of nomenclature.

In conclusion, it may be said that this first interchange of views on nursing problems in Africa has opened the way for further developments and co-operation within the Region.

SEAFARERS AND VENEREAL DISEASE *

In September 1953, an international course on the control of venereal disease among seafarers opened at the Rotterdam Port Demonstration Centre. The Centre is a joint enterprise of the Dutch Government, the Municipality of Rotterdam, the Rotterdam Foundation for Skin and Venereal Disease Control, and the World Health Organization. It may come as a surprise that so many bodies should have combined for the purpose of working on a problem that may appear to be solved, or about to be solved, by the extensive use of penicillin. But the reports prepared by Rotterdam Demonstration Centre since its inauguration in 1951 do not encourage too great an optimism. It is true that the new drug has caused a considerable drop in the number of cases of venereal disease on shore; but the seafarer, by the nature of his calling, is particularly exposed to these diseases; and, again because of his calling, it is difficult to ensure for him the same standard of medical treatment as is generally available to other sections of the population. Not only is he liable to contract any disease that happens to be prevalent at a port of call, but also he may spread it at the next.

* Abridged from a paper by Dr. E. H. Hermans, Associate Professor of Tropical and Skin Diseases, University of Leyden, the Netherlands

From the point of view of controlling venereal disease, occupational factors create special problems. As the sailor is ever on the move, the doctor in one port may have difficulty in determining his medical history, perhaps because of a language barrier, perhaps because the seaman does not know. Shore leave may be too short for a fresh diagnosis, and the best treatment is consequently not easy to determine. To overcome these difficulties, the Office International d'Hygiène Publique (of which the World Health Organization is the successor) produced an international personal booklet, a copy of which was to be given to every seaman treated for venereal disease, and in which the necessary information could be recorded. An inquiry conducted by the Rotterdam Centre revealed that in many ports these booklets are not used and that in some they are even unknown. Then again, bacteriological diagnostic methods have not been standardized internationally, so that a doctor may not be able to evaluate a laboratory report made in the last place the seaman visited.

As a solution to these problems, one Dutch shipping company adopted the interesting practice of placing on board its freighters a male nurse who at the same time acted as the ship's clerk. It had the surprising result of stepping up the number of cases reporting for treatment of venereal disease from 7.5% to as much as 17% of the crew (the figures are based on the European crews of 11 freighters over the period of one year); and it is thought that if all cases were reported the figure would be even higher.

As to the facilities for treatment in ports, the inquiries conducted by the Rotterdam Centre show that they are often unsatisfactory. Sometimes the clinics are far away from the docks and difficult to reach; the hours of opening may be short, and there may be a long wait. A few clinics are open for only one hour a day. These, admittedly, are extreme cases; but if we consider the crews of tankers, for example, which stay but a very short time in port, it is obvious that everything should be done to make consultation and treatment easily available. In the East, some sailors are reluctant to attend free clinics, partly because of racial prejudice, partly because they have no confidence in the methods of treatment. From other places, however, come reports of very good treatment centres: they are located near the docks and are easy to find, free help is given day and night, and hospital beds are also available free of charge. One centre has special bacteriological and serological laboratories.

In general, hospitalization is a vexed question. Administrative and financial difficulties of all sorts may arise. Seamen may be reluctant to go to hospital because they are in a foreign country, or because it costs money. And what of the sailor who on discharge from hospital has no money and finds his ship gone ? If some social service does not take care of him, he may well fall into the hands of the police, who will perhaps expel him from the country.

In recent years, the custom has been establishing itself of having personnel not medically qualified give penicillin on board ship. Regulations differ from country to country; but on the ships of the major maritime nations it is usual, when no doctor is carried on board, for the mate or the chief steward to give penicillin treatment to patients and suspects. The opposition to this practice shown in the replies to a questionnaire sent to port doctors throughout the world (and only in 25% of the replies was the practice actually recommended) would seem to indicate that in many port clinics the latest methods of treatment are not properly known. Yet there is no doubt that such use of penicillin can be extremely valuable, particularly in cases of gonorrhoea. For syphilis, there are certain reservations, as the diagnosis

of this disease calls for a darkfield microscope, which would have to be used by a qualified doctor.

However, penicillin alone will not solve the problem. The quick cure does not always encourage the patient to take the necessary follow-up treatment, nor indeed does it prevent quick reinfection. It is obvious, then, that any determined effort to reduce the incidence of venereal disease must go beyond purely medical and administrative measures to embrace the social and psychological aspects of the problem. Better living conditions on board ship, and properly run centres for recreation and meeting people on shore would go far towards reducing the explosive loneliness of the seafarer. The example of Norway is noteworthy in this respect. Of all the countries in the world, Norway is the one with the highest percentage of seafarers in the population, and the welfare of its sailors is a matter of national concern. The Norwegian Government has accordingly established homes for Norwegian sailors in a great many ports throughout the world. Reports on their work are very satisfactory. But the Norwegian example cannot simply be applied by all other countries. In social welfare work for seafarers, one immediately comes up against the difficulty that besets all international work—differences of culture, religion, race, and language. Figures on the number of seamen visiting existing homes are encouraging, but much work will have to be done, perhaps by the seamen themselves, if far-reaching changes in their life ashore are to be brought about.

From the psychological point of view, a better understanding of the motives underlying prostitution is essential in the fight against venereal disease. Efforts to eradicate prostitution alone are bound to fail as they have failed in the past, for prostitute and client are bound by promiscuity, by the inclination towards temporary intercourse with different people.

It is with these and related subjects—medical, administrative, social, and psychological—that the international course at the Rotterdam Port Demonstration Centre was concerned. It was a 12-weeks' course, attended by 11 venereal-disease specialists—physicians, social workers, and serologists—from different countries in Europe. The course was exclusively in English; a course in French will be held in the autumn of 1954.

By intelligent use of the latest methods of treatment, by the improvement of living conditions, by proper education and co-ordinated international action, it may be possible to eradicate venereal disease completely. The Rotterdam Port Demonstration Centre hopes to contribute towards that end.

TYPHUS CONTROL IN GUATEMALA AND MEXICO

From the Americas come two reports on typhus-control activities. The first concerns a campaign undertaken by the Government of Guatemala, with the help of the Pan American Sanitary Bureau, in 1946; the second describes a nationwide campaign initiated in 1951 by the Government of Mexico.

The Guatemalan campaign included vaccination of 70% of the population living in zones of typhus endemicity and disinfestation of all cases and contacts. These operations were carried out by 25 strategically located teams, which were under the supervision and training of two doctors who were in charge of two mobile units.

Public opposition to the campaign was eliminated within the first six months. From June 1946 to December 1951, DDT was applied to 194,711 persons, and 1,538,126 articles of clothing were disinfested. In 1950, mass vaccination gave way to a programme of selective vaccination by age-groups in certain zones. UNICEF assistance, in the form of provision of DDT and other necessary supplies, was given in the same year.

The results of this campaign—which will be consolidated through continued vaccination and disinfestation—are illustrated by the following figures, showing the decrease in the number of cases and of deaths over a nine-year period :

Year	*Cases*	*Deaths*
1943	1,338	213
1944	2,144	381
1945	2,834	323
1946	1,043	135
1947	251	37
1948	69	9
1949	26	2
1950	10	2
1951	8	0
Total	7,723	1,102

The materials employed in the Mexican campaign are of interest : DDT powder is used alternately with other residual-effect insecticide powders in order to prevent the vector from developing resistant strains. Envelopes containing a quantity of 10% DDT sufficient to delouse two articles of underwear are available at 10 cents each (Mexican currency), and a 3½-cent profit per envelope is used to further the campaign activities. Experiments with laundry soaps have been undertaken, and it has been found that a soap containing 5% DDT is very effective in killing the vector, and that one with 3.5% DDT is adequate. A 2% DDT soap is now under study. Also of note is the discovery that year-old soap retains more than 75% of its initial DDT content. An effort is being made to interest large soap manufacturers in producing and marketing this soap, to be sold at cost. For head delousing, a vaseline containing 2% DDT has proved more acceptable than kerosene, DDT powder, or shaving. This product is not only 100% effective for hair delousing, but also has a residual effect which kills lice larvae.

Mass treatment is administered in communities which show, in lice surveys, a higher than 30% index; selective treatment by blocks is applied in communities having a 10%-30% index, and selective treatment by families, in those in which the index is less than 10%. All clothing and other articles which come into contact with the body are treated with DDT powder, particular attention being paid to the seams. The original infestation rate was 3.1 times that after treatment of clothes with DDT powder, and 4.5 times that after use of DDT soap.

Health education is an important feature of this campaign. The trained nurses employed in the work were recruited either locally or among those having a cultural background similar to that of the population of the specific area to which they are assigned.

Further details concerning these two campaigns may be found in the *Boletín de la Oficina Sanitaria Panamericana*.[1]

[1] *Bol. Ofic. sanit. panamer.* 1953, **34**, 225, 236

STATISTICAL PROGRAMME OF THE PAN AMERICAN SANITARY BUREAU *

The importance of statistics for co-ordinated health planning in the Americas has been recognized for many years. The Pan American Sanitary Code, adopted in 1924, includes many references to statistics, especially to the statistics of the communicable diseases.

In the last few years, international agencies have recognized the need for the development of comparable vital and health statistics for national and local programmes as well as for the fulfilment of the international needs for such data. The statistical programme of the Pan American Sanitary Bureau (Regional Office for the Americas of the World Health Organization) has been expanded to render greater service to governments in the field of health statistics and in the co-ordination of the statistical programme of the Americas. This expanded programme includes : (1) collection, analysis, and distribution of epidemiological-statistical information; (2) consultant service to countries; (3) statistical training programme; and (4) consultant service on statistical phases of programmes of the Bureau.

In accordance with the objectives of the Pan American Sanitary Code, a major activity of the statistical programme of the Bureau is the collection, analysis, and distribution of statistical information regarding communicable diseases.

The International Sanitary Regulations established international reporting procedure for six quarantinable diseases : cholera, plague, relapsing fever, smallpox, typhus, and yellow fever. On receipt of a report of an outbreak of one of these quarantinable diseases, the Pan American Sanitary Bureau disseminates this information to all countries directly concerned. All reports received during a week are combined and included in the *Weekly Epidemiological Report*, distributed by air mail to all countries. Reports of quarantinable diseases are sent by cable to WHO headquarters in Geneva.

Health officials require reports of other communicable diseases in addition to the quarantinable diseases. The Pan American Sanitary Bureau, on a monthly basis, collects information regarding the notifiable diseases and publishes these reports in its quarterly publication *Health Statistics*.

In addition to statistics of the communicable diseases, morbidity statistics in the broader sense of all illness are valuable for planning and guiding health programmes. The statistical programme of the Bureau includes assistance to governments in programmes involving health statistics.

Articles on statistical programmes and summarized data illustrative of the activities of public-health statistical agencies in the American countries are published in the *Boletín de la Oficina Sanitaria Panamericana*.

In order to assist in the improvement and standardization of health statistics, the Bureau has established a programme of technical assistance to countries, upon request through the Zone Offices.

One of the significant recent developments for the improvement of health statistics was the establishment of the (WHO) Expert Committee on Health Statistics and of the National Committees on Vital and Health Statistics. The programme of the Bureau includes contracts with national committee members,

* Summary of a paper by Dr. Ruth R. Puffer, published in *Boletín de la Oficina Sanitaria Panamericana*, 1953, 35, 11

as well as with national health services, for the implementation of the internationally recommended standards.

To offset the shortage of qualified professional statisticians, the international agencies are working together to provide educational facilities to meet the demand. Statistical training centres have been established, and fellowships are being given to personnel employed in statistical programmes.

The first training programme in the field of vital and health statistics in the Americas was the Inter-American Seminar for Biostatistics held in Santiago, Chile, from 25 September to 15 December 1950, sponsored by the Government of Chile, the United Nations, the World Health Organization, the Pan American Sanitary Bureau, the Inter-American Statistical Institute, and the National Office of Vital Statistics of the United States Public Health Service. The second major undertaking in the training of statisticians was the establishment of the Inter-American Center of Biostatistics in Chile, in accordance with the agreement signed on 21 August 1952 between the Government of Chile, the United Nations, and the World Health Organization. The first course, of 9 months' duration, started in the School of Public Health on 2 March 1953, with 32 students, 17 from Chile and 15 from 14 other countries.

In order fully to utilize the health and medical data collected in the various programmes of the Bureau, statistical consultant service is rendered in the planning phases so that valuable data are collected for the administration of the programme and evaluation of the work as it progresses, and for the measurement of the results. Since projects are carried out in the countries, this requires local consultant services.

Gesundheit ist Reichtum

An abridged version of Professor C.-E. A. Winslow's study *The cost of sickness and the price of health*, originally published in 1951 in English as No. 7 in the *World Health Organization: Monograph Series*, has recently been published in a German translation, under the title *Gesundheit ist Reichtum*, by Georg Thieme Verlag, Stuttgart, at DM 2.70.

Sanitary Report on the Mecca Pilgrimage

As the International Sanitary Regulations (WHO Regulations No. 2) did not come into force until 1 October 1952, when the Mecca Pilgrimage for the Year of the Hegira 1371 (A.D. 1952) was over, WHO has collected information on that Pilgrimage in accordance with the provisions of Article 151 of the International Sanitary Convention of 1926/38, which imposes on health administrations the same regulations governing the furnishing of sanitary information as Article A15 of the new Regulations. This information has been published in a summary report issued as a supplement to the WHO *Weekly Epidemiological Record* No. 359, and dealing with the journey to the Hedjaz, arrival and sojourn there, Arafat and Mena days, the return journey, contraventions of the International Sanitary Regulations, general comments, and the Jedda quarantine station.

Review of WHO Publications

INFLUENZA EPIDEMIC IN THE NORTHERN HEMISPHERE—1952-3

While it had seemed since 1933 that the important epidemics of influenza occurred at intervals of from four to eight years, hardly two years separated the last two pandemics of 1950-1 and 1952-3. Do major epidemics tend, therefore, to recur at increasingly shorter intervals ? Or is it simply that greater accuracy of diagnosis and information makes the outbreaks, even in a mild form, seem much more widespread than was previously supposed ? The authors of a study appearing in the *Epidemiological and Vital Statistics Report*[1] consider this latter explanation as the more likely.

South-East Asia, the Far East, and the Pacific Islands

The first epidemic of any importance in 1952 in the Northern hemisphere occurred in Guam in October. At the end of the same month, an outbreak was noted in the west of the Caroline Islands which spread to the whole archipelago and reached the Marshall Islands. At the end of November, an unidentified respiratory disease appeared in the Philippines, and subsequent information referred to "serious influenza", which continued until February. At the end of December and the beginning of January, news arrived of an acute respiratory disease with the characteristics of influenza in the Hawaiian Islands. In Japan, the epidemic began in December in the Tokio region; it spread to other parts of the country, and by 17 January 20%-30% of schoolchildren at Takaoka and in the county of Shimoshinkawa were absent on account of the infection. In the second half of January, 30% of the inhabitants of Tokio appeared to be affected. The highest number registered in one week in Japan was 9,853 for the week ending 14 February.

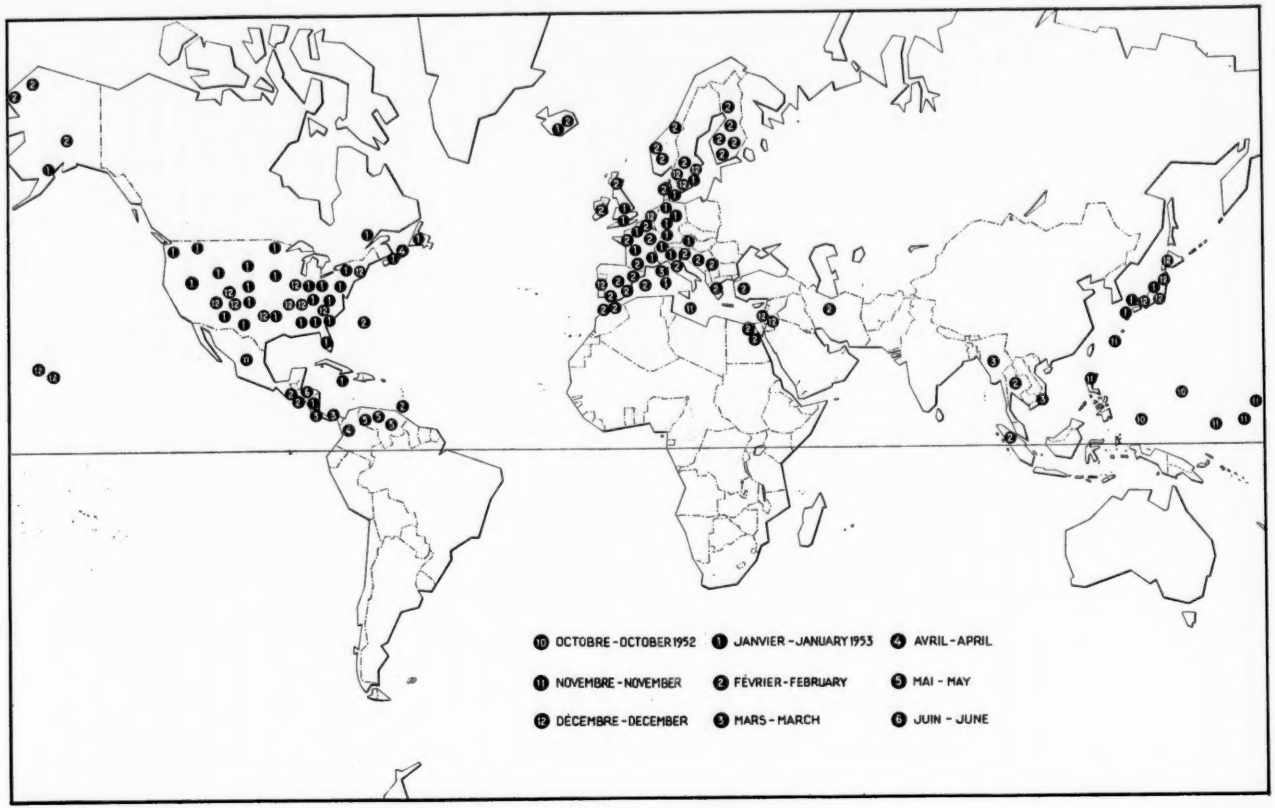
There is no exact information for most of the other countries of this geographical area.

America

In America there was a marked increase in December in the number of cases of acute respiratory diseases among military personnel at one station in Missouri. During the last week of the same month an outbreak of an influenza-like infection was reported in Colorado and North Carolina. At the beginning of January, an epidemic broke out among the civilian and military population of Alaska. At the same time, epidemic influenza appeared in Indiana, South Dakota, Oklahoma, Missouri, and Florida. In a very short time, all the States of the Middle West and of the South—particularly Texas—were affected, as were, to a lesser degree, some of the States of the South-East and North-East. In many areas the schools had to be closed. By the end of January, the incidence had declined, although it was estimated that in the second week of February 2% of United States workers were still absent on account of influenza or other diseases of the respiratory tract. This was the highest rate observed since 1946. The influenza in general was mild, but certain serious forms were found among old people and young children. In Pierce County, Washington State, alone, 10 infants who had

[1] *Epidem. Vital Statist. Rep.*, 1953, **6**, 203

FIG. 1. CHRONOLOGICAL DEVELOPMENT OF INFLUENZA OUTBREAKS IN THE NORTHERN HEMISPHERE — OCTOBER 1952 - JUNE 1953


10 OCTOBRE - OCTOBER 1952
11 NOVEMBRE - NOVEMBER
12 DÉCEMBRE - DECEMBER
1 JANVIER - JANUARY 1953
2 FÉVRIER - FEBRUARY
3 MARS - MARCH
4 AVRIL - APRIL
5 MAI - MAY
6 JUIN - JUNE

appeared well in the evening died overnight; the autopsy revealed the presence of tracheobronchial and serous exudate in the lungs.

In Mexico, the epidemic began at the end of November and attained its peak towards the end of January. The same is true of Alaska, where towards the end of January more than 30% of schoolchildren in the Anchorage region were affected. In Canada, local outbreaks were noted at the end of January, but the epidemic did not become general. There was some recrudescence between the end of March and the beginning of May, the highest number of cases being recorded during the week ending 2 May. In Costa Rica, Guatemala, Nicaragua, Panama and in Trinidad and Tobago, influenza was notified between the beginning of February and the beginning of March. In Colombia, a local outbreak developed at Medellin towards the end of March. In Venezuela, an outbreak began between 17 and 23 May and attained its peak at the beginning of June. In June also, an epidemic developed in Honduras.

Europe, Africa, Near and Middle East

Unlike former epidemics, that of 1952-3 seems to have started almost simultaneously over a considerable area of western Europe. A first outbreak of mild " influenza " was observed in Malta at the beginning of November; at the beginning of December a focus was reported in Sweden. Cases of an influenza-like disease appeared at the same time in the Netherlands and, at the end of December, in Portugal. At the beginning of January there was an increase in the number of isolated foci in various countries (England, France, Sardinia, western Austria, western Germany), but it was impossible to establish any correlation between them. The peak period of the epidemic in Sweden was in the first half of February. In Denmark and Switzerland the peak was reached during the third week of the same month, while in Italy it occurred during the first 10 days of March, and in Spain and Norway during the second week of March. In some countries (Denmark, Finland, Spain) the peak was reached much later during that winter than in the previous epidemic.

Although it is not possible to say why, certain territories seem to have escaped influenza altogether—for example, the Mediterranean area in France, the Rhone Valley, and the Alps. Ireland, Scotland, and the east of Austria were very little affected. On the other hand, practically the whole country was affected in the case of the Federal Republic of Germany, Italy, Spain, Switzerland, and Yugoslavia. The infection was mild everywhere.

Mortality and morbidity

Mortality due to influenza was lower than in 1951 in all areas for which exact information is available, with the exception of Paris. The authors give tables showing the number of cases and the number of deaths notified for many countries, by monthly or four-weekly periods, together with the corresponding figures for previous epidemics. The variations in the figures are significant even though they represent a very small part, even, for certain countries, an infinitesimal part, of the real incidence of influenza.

Virus

As in 1951, virus-A influenza was definitely more frequent than virus-B. However, virus B did play some part in the epidemic in Denmark, and its presence was notified in Ireland, Sweden, and the USA. Two principal groups of virus-A strains were isolated : one group resembled the 1951 Liverpool strains, and the other—the majority—the " Scandinavian " strains. The preponderance of the original A-prime (FM1) antigen has diminished since 1947. The Liverpool strains were reported from Paris, Toulon, Geneva, and Finland, and in connexion with all the

examinations carried out in Portugal ; it seems that none were isolated in North America or Japan. The ability to survive of the Liverpool strains appears to be much poorer than that of the Scandinavian strains. The 1952-3 epidemic was not heralded by premonitory outbreaks as was the case in previous years.

LEPROSY : COMPARATIVE HEALTH LEGISLATION

A comparative study of leprosy-control legislation has been published in the latest number of the *International Digest of Health Legislation*.[1] The recommendations of the international leprosy conferences and, more recently, of the WHO Expert Committee on Leprosy have aimed at humanizing the existing practices for dealing with lepers while at the same time affording the best possible protection for the health of the community.

These practices need to be reviewed from time to time, for many of them interfere with the liberty of the subject (compulsory isolation, prohibition of marriage and of engaging in certain trades or callings, etc.). Moreover, present knowledge of the disease indicates that it is much less infectious than it was formerly thought to be, and much less infectious than, for example, tuberculosis. It has also been observed that the incidence of leprosy has often declined most rapidly in countries in which the legislative measures in force were relatively mild.

The laws dealt with in this study are drawn from about 30 countries and have, for the most part, been published either in earlier numbers of the *International Digest of Health Legislation* or in the *Bulletin mensuel de l'Office International d'Hygiène Publique*.

The subject is dealt with under the following heads :

(1) Detection of lepers : notification, examination of suspects and contacts, leprosy surveys, and censuses;

(2) Measures relating to lepers : isolation, release and discharge, treatment, trades or callings, marriage, immigration;

(3) Measures relating to household contacts : protection of infants and children, welfare services;

(4) Miscellaneous : definitions, harbouring and return of escaped lepers, occupational rehabilitation, movement of lepers, leprosy regulations, and the role of dispensaries;

(5) Conclusion.

The measures applicable to the leper himself and to his contacts are the most important, and those which are found to vary the most are the measures in force in the different countries with respect to isolation and release. As a preventive measure, compulsory isolation is still the most commonly employed measure in those countries in which leprosy is endemic. However, the forms of leprosy to be isolated, the nature of isolation (domiciliary or institutional), and the administrative means employed for segregating lepers differ from one country to another. In certain countries, isolation is based on a clinical examination confirmed by a bacteriological examination. This is in keeping with modern teaching. In many other countries, however, no provision is made in legislation for any bacteriological examination.

The prompt discharge of leprous patients from a leprosarium is now recommended. The WHO Expert Committee on Leprosy holds the view that the prompt discharge of patients from the leprosarium as soon as they are non-infectious may have an important psychological effect and may induce

[1] *Int. Dig. Hlth Leg.* 1954, 5, 3. An offprint of this comparative study will also be published.

leprous patients to come forward earlier for treatment. Release is generally granted in two stages: first, temporary or conditional release, followed at a later stage by discharge. The medical criteria for release vary markedly from country to country. In certain countries, the conditions for release are vague, which may cause a leper to be segregated for an indefinite period; in others, no conditions at all are specified. In some instances, the conditions for release are more precise than those for isolation; where this is so, release depends on the evolution of the disease and on bacteriological examinations. The difference in the criteria prescribed in different countries for the release of lepers is very great, the length of the period of isolation before final discharge is granted varying from six months to five years.

Of the measures relating to household contacts of lepers, those relating to the protection of infants and children are the most important. Muir holds the view that " if all children were kept free from contact with infection for the first ten years of life, leprosy would almost, or entirely, die out of an endemic country within two generations ".

Provision is usually made in leprosy-control laws for the isolation of infants at birth or of older children whenever a case of leprosy is discovered in the family. Such children are removed either to a foster-home or to a preventorium. There are also some leprosy-control laws which prohibit leprous patients from engaging in trades or callings in which the person employed comes into contact with children (children's nurse, wet-nurse, nurse, midwife, etc.).

Compulsory isolation and prohibition of engaging in a great many trades or callings usually deprive a leper of his means of livelihood and of the opportunity of providing for his dependants. A great number of leprosy-control laws therefore make provision for assistance to lepers and their families. These may take the form of family allowances, free treatment, maintenance of children, etc.

To sum up : leprosy-control legislation varies to such an extent that it is impossible to summarize the study here. In view of the difference in local circumstances as regards facilities for hospitalization and treatment of lepers, diagnostic laboratories, organization of public-health services, etc., the diversity of legislative measures for the control of leprosy is only to be expected. It is impossible to frame a uniform programme for leprosy control for the whole world. This is borne out by the survey, the aim of which is to give an analysis of the methods of leprosy control in use in different countries.

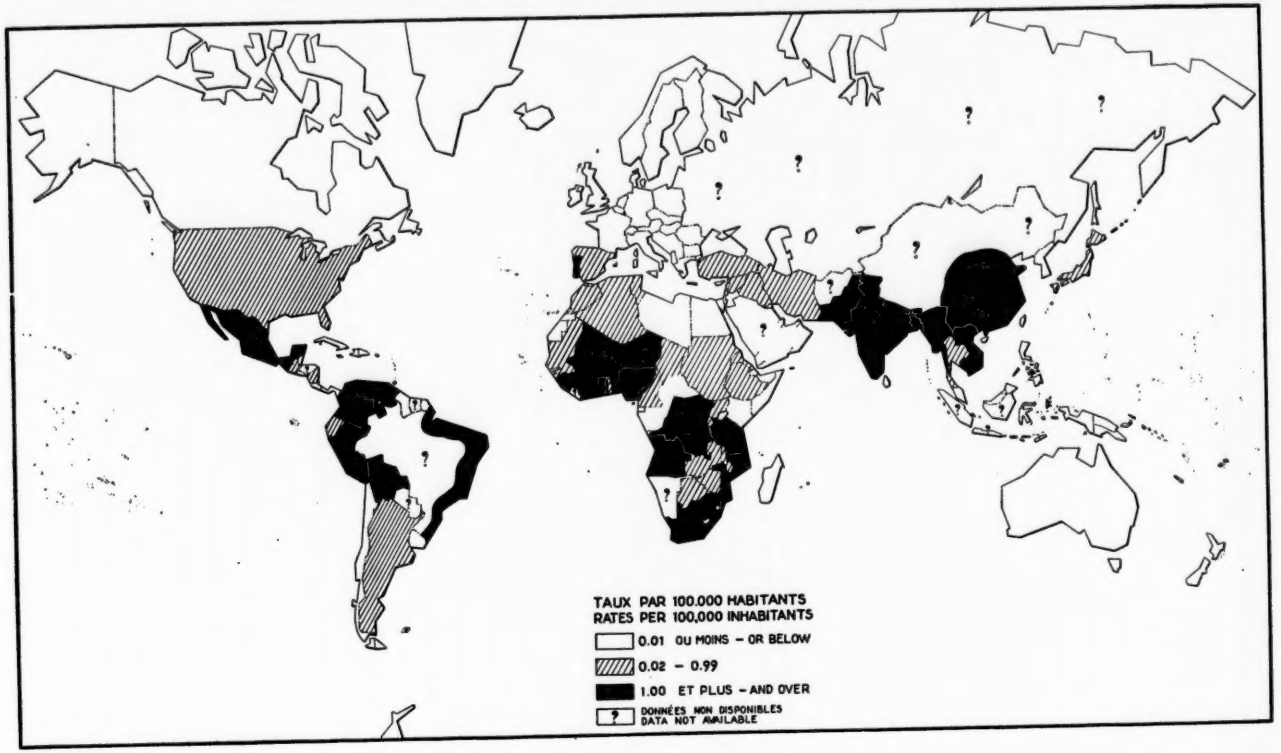
SMALLPOX ENDEMICITY IN THE WORLD—1936-50

Smallpox is still endemic in several parts of the world, despite the measures available today for avoiding and controlling it. Certain areas may remain free from the disease for long periods of time as the result of effective quarantine, systematic vaccination or mass vaccination campaigns, and other public-health measures. Nevertheless, as a consequence of international sea and air traffic, there is still a threat of infection from countries where the disease persists, and which are termed " endemic ".

A study has been made of smallpox endemicity in various countries of the world from 1936 to 1950 and has been published in the *Epidemiological and Vital Statistics Report*.[1] The statistical methods employed and the results they have led to are there summarized as follows :

[1] *Epidem. vital Statist. Report*, 1953, **6**, 227

FIG. 2. WORLD DISTRIBUTION OF SMALLPOX ENDEMICITY CASE-RATES, 1936-50


TAUX PAR 100.000 HABITANTS
RATES PER 100,000 INHABITANTS
0.01 OU MOINS – OR BELOW
0.02 – 0.99
1.00 ET PLUS – AND OVER
DONNÉES NON DISPONIBLES
DATA NOT AVAILABLE

" A simple index for judging the endemic level has been worked out for each country by averaging the smallpox attack or death rates for those five years during the period 1936-1950 in which the lowest incidence of the disease was recorded. If the endemicity rate is high, the inference drawn is that the endemic level of smallpox in the country was also relatively high.

" Using this endemicity rate, all countries in the world for which information is available, and for which the endemicity rate exceeds 1 per 100,000 inhabitants, have been placed by continents in their relative order of endemicity.

" This study, while not attempting to define the term ' endemicity ', suggests a method for its measurement which can be used, for comparative purposes, to demarcate zones and areas in which endemic foci of the disease existed during the period under review. Attention is thus focused on certain areas where it is believed that if concerted measures were directed at the eradication of smallpox, the danger of the disease to the rest of the world might be removed or at least greatly diminished, and the incidence of smallpox in the world as a whole materially reduced.

" It is acknowledged that the period chosen for study—i.e., 1936-1950—is one which terminated some years ago, and that the present picture of smallpox may have changed in those countries where strenuous and determined efforts have been made in the last few years to control the disease. Further, the conclusions are subject to several limitations inherent in the statistical information analysed, such, for instance, as differences in the degree of reporting of smallpox cases and deaths.

" The geographical distribution in the world of countries with endemic foci of smallpox is shown in a map. The highest endemic level of smallpox is found for India and Pakistan, followed by Burma and Indochina. In the region of the Americas, Venezuela, Brazil, Colombia, Bolivia, Peru, Paraguay and Mexico have relatively high endemicity rates. In the African continent, among the large-sized countries, Belgian Congo, Nigeria, Tanganyika and the Union of South Africa have relatively high endemicity rates. In Europe, only Portugal shows a relatively high rate.

" A more detailed examination of the figures of individual States or provinces has been carried out for Mexico, USA, and India and Pakistan. In Mexico, the endemic focus for smallpox is believed to exist in the States in the interior. The pattern of smallpox distribution for the United States of America suggests that some reason other than its proximity to endemic foci of the disease in Mexico must be looked for to explain the presence of the disease.

" A separate examination of the endemicity rates for individual ports shows the highest endemic level of smallpox for Calcutta, followed by Delhi and Bombay. In general, all the major ports in India show endemicity rates of an order higher than those for any other country."

Notes and News

First WHO Asian Conference on Malaria

With more than 50 persons from 20 different countries of Asia participating, the First WHO Asian Conference on Malaria was held in Bangkok in September 1953 to discuss plans for eliminating malaria as a major public-health problem in the Region. Dr. Luang Ayurakit Kosol, Director of the Division of Malaria and Filariasis Control of the Thai Ministry of Health, who was elected Chairman of the conference, emphasized that the problem of malaria concerned more than half the human race and, quite apart from the deaths it caused, rendered millions of people weak and inefficient. One of the main themes in the discussions was the significance of malaria not only as a menace to human health, but also as an economic liability of the greatest importance. Many examples were given of the economic value of malaria control, but one of the most striking was taken from Thailand, where more than 50,000 cases of malaria are estimated to have been prevented within a single year by control work in an area with a population of just over 280,000; the prevention of these cases meant a saving of some 175,000 man-days of labour.

The conference concluded that a strong, permanent malaria-control organization was necessary in every country where the disease was a major public-health problem, and that it was highly desirable to carry out malaria control simultaneously in as large area as possible, both in order to increase the efficiency of the campaign and in order to reduce expenses, the campaign eventually being discontinued after malaria has been controlled for some time. Among its recommendations, two should be recalled here : one providing for experiments aiming at finding means of reducing the per capita cost of malaria control, and another calling for the co-ordination of malaria-control schemes not only within a given country but also, with WHO assistance if required and if possible, on an inter-country, intra-regional, and even inter-regional basis.

Mental Health Seminar for Eastern Mediterranean

Under the sponsorship of WHO, a very successful two-week seminar on mental health problems was held in Beirut on the invitation of the Government of Lebanon from 23 November to 5 December 1953, and was attended by nearly thirty leading psychiatrists and medical specialists from the Eastern Mediterranean Region and Europe. WHO provided fellowships permitting participants to attend from Egypt, Greece, Iran, Iraq, Pakistan, Sudan, Syria, and Turkey; in addition to WHO Secretariat members from the Regional Office and headquarters, lecturers and discussion leaders were invited from the Netherlands and the United Kingdom of Great Britain and Northern Ireland.

The three principal themes for discussion were : (1) professional training for mental health work; (2) development of in-patient and extra-mural facilities for treatment of psychiatric disorders ; and (3) influence of social and cultural factors on psychiatric disorders and their treatment.

New Nursing Course for Eastern Mediterranean Region

A four-year course leading to a B.Sc. degree in nursing—the first of its kind to be given in the Eastern Mediterranean Region—will be instituted by the Faculty of Medicine of the University of Alexandria in October 1954. The course will cover all aspects of nursing, including public-health work. There will also be a special diploma course for nurses who have already received their basic training, enabling them to specialize in public-health nursing, nursing education, and administration.

Students will be accepted from all Eastern Mediterranean countries, and 30% of the vacancies will be reserved for women from outside Egypt. The aim of the course is to train women for posts as senior administrators and teachers of nursing; for, although there are many excellent nursing schools in the Region, it is difficult to obtain advanced training for administrative posts.

This project is the result of long-term planning to raise health standards by the Ministry of Health of Egypt, the Faculty of Medicine of the University of Alexandria, and the WHO Regional Office for the Eastern Mediterranean. The original teaching staff will consist of five nursing instructors provided by WHO, while fellowships will be granted to trained women from Egypt to enable them to qualify abroad to take over the teaching posts when the WHO staff is withdrawn. WHO will also contribute teaching materials and equipment. Once the course gets under way, it will grant further fellowships to permit students from the Eastern Mediterranean Region to attend.

Yemen Becomes 81st Member of WHO

Yemen became the 81st Member of WHO on 20 November 1953, when Prince Saif al Islam Abdullah, Minister of Foreign Affairs of the Yemen

and leader of the Yemen delegation to the VIIIth General Assembly of the United Nations, signed the Constitution of the World Health Organization at United Nations Headquarters in New York.

Seventh Session of the Directing Council of PASO

The seventh session of the Directing Council of the Pan American Sanitary Organization was held from 9 to 19 October 1953 in Washington, D.C., under the chairmanship of Dr. Hernan Urzua, Director-General of the National Public Health Service of Chile. The Council is composed of delegates from the 21 American republics and of representatives from France, the Netherlands, and the United Kingdom of Great Britain and Northern Ireland on behalf of their territories in the Western hemisphere. It serves simultaneously as WHO Regional Committee for the Americas.

A budget of $2,100,000 was voted for 1954 for continuation of the health programmes to be carried out with the guidance of the Pan American Sanitary Bureau. An additional $1,050,392, allocated for 1954 to the Region of the Americas by WHO, will also be available. In its report, the Council called for increasing emphasis on the training of health personnel; it also stated that the Bureau should give technical guidance in the planning and operation of programmes for the eradication of such communicable diseases as urban yellow fever, malaria, smallpox, syphilis, and yaws.

The Council considered the problem caused by the growing multiplicity of agencies that approach various governments in connexion with public-health programmes. A resolution was adopted in which the situation was reviewed and stating that the Council considered that such programmes for the Americas should be concentrated in the Pan American Sanitary Bureau, which had been created for that purpose, and which also acted as the regional organization for WHO.

Views on WHO

A Great Leader in World Health

A recent issue of the *American Journal of Public Health* (1953, **43**, 9, 1172-3) contains a leading article on Dr. Brock Chisholm, former Director-General of the World Health Organization :

" When the World Health Organization was organized a little over seven years ago, it was unusually fortunate in two respects. Its sponsors framed a constitution of the widest possible scope, envisaging public health in its most modern and constructive sense; and the Interim Commission was able to find in Brock Chisholm a leader of unparalleled capacity.

" Dr. Chisholm's retirement after nearly two years with the Interim Commission and five years as director-general of the World Health Organization closes a notable chapter in the history of public health and of international collaboration. His dealings with individuals were directed by the skill of an experienced psychiatrist; and his vision and courage in program planning were characteristic of a leader of inherent and essential greatness.

" In Dr. Chisholm's farewell address to the Sixth World Health Assembly last spring, he pointed out that ' the glaring contrast between the tremendous sacrifices we are forced to make for piling up instruments of war and destruction and the insignificant amount of energy and money we spend for constructive purposes is symbolic of the challenge modern man is facing '.

" He appreciated the possibilities offered by the machinery set up at Geneva and noted that ' a harmonious relationship between a world-minded Assembly, an independent Executive Board and a free and reliable secretariat can overcome practically all handicaps which might interfere with the fullest realization of WHO's potentialities'. Furthermore, Dr. Chisholm never visualized the health program as a separate entity. He understood that ' there has been no social progress if the physically rehabilitated people merely swell the ranks of the unemployed, dissatisfied, or hungry. The extra labour gained through such campaigns will mean progress only if the people freed from disease are assured of capital investment for production and stabilized markets for distribution, if they are thus guaranteed sufficient work and, in addition, given adequate educational and cultural facilities for themselves and their children.' He therefore co-operated to the fullest extent with the FAO, with UNESCO, and with all the other international agencies concerned with

human welfare. We owe Brock Chisholm a deep debt of gratitude for steering the World Health Organization so wisely and skillfully on the first stages of its far-flung voyages.

"The choice of Dr. M. G. Candau as Dr. Chisholm's successor is an unusually wise one. We all look forward confidently to continuing progress in the coming years."

CARE and WHO in South-East Asia

A joint undertaking of CARE and WHO, aimed at improving the health services of certain countries in South-East Asia, was the subject of a comment published in a recent number of the *Journal of the American Medical Association* (1953, **152**, 1045) :

"During the recent convention of the American Medical Association the Board of Trustees endorsed a joint project of CARE and the World Health Organization to provide needed equipment and supplies to India and neighboring countries. The Trustees' action was followed by one of the Woman's Auxiliary, which adopted a resolution that also pointed up the need for such improved medical services. The project offered by CARE and the World Health Organization is based on a recent WHO survey that established that in India alone there are some 80 hospitals, medical schools, nursing schools, and similar institutions, and 210 more in neighboring countries, with a total of some 42,000 beds, which are in urgent need of the most basic supplies, including bed linen; surgical instruments; simple laboratory equipment; and textbooks on materia medica, pathology, latest surgical and treatment techniques, and similar subjects. A hospital for patients with tuberculosis in Ceylon, for instance, was found to be lacking sterilization equipment for instruments and utensils and for the notoriously bad drinking water of the community. Two natives were kept busy boiling water all day to meet the need. A nursing school in India was providing all of its instruction with the aid of a single anatomic atlas, dog-eared with age; its request was for books, 'just one textbook each on public health, nursing techniques, therapeutical methods, etc.' The Ramakrishna Hospital in East Rangoon, which treated more than 76,000 patients last year, not counting patients readmitted, has 16 physicians on its staff, only 4 of whom, the residents and interns, are paid. The other 12 serve gratuitously at the hospital and help make up the constant deficit of the institution with the income from their private practice.

"The individual physician of India, Burma, and Thailand often is lacking in health tools which the abject poverty of his country prevents him from obtaining. Where large portions of any population are subjected to constant hunger and want, the health standards of a nation are bound to suffer, not merely as the result of general malnutrition, but because of the lowered resistance to all forms of disease, whether epidemic or endemic in nature. Help in such instances is especially appreciated and of almost incalculable value."